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Prolegomena to the epistemology of languages for non-specialists: the example of CLIL

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Abstract
CLIL has attracted the attention of LSP teachers worldwide and generated much literature. As a teaching and learning tool, it is frequently referred to in pedagogy, but a lot less in the epistemology of didactics. The present contribution aims to show how CLIL is an interface between conceptual research and practical implementation but that it cannot serve as a conceptual tool in the shaping of didactics as a field of research. Instead, concepts should be understood as context-dependent; they also vary with the subject matter to which language is connected (English for law differs from English for science) and therefore need the contribution of human sciences to emerge in their own rights.

Keywords: LSP, CLIL, concepts, epistemology, interdisciplinarity

Introduction
In the research field of language teaching and learning, CLIL (« Content and Language Integrated Learning ») plays a central part in that it combines the theoretical features of cognitive theory and the practical characteristics of a pedagogical tool. It appeals to teachers because it does not necessitate the acquisition of a scientific background in order to implement it; in fact, it seems to have emerged from a hands-on experience of teaching and learning a language by resorting to activities instead of drills and grammar exercises. As to students, even if CLIL does not automatically result in the real mastery of a language, it appeals to their sense of motivation to a greater extent because it aims to imitate real life experience of language use, thus emphasizing the importance of context in the learning process.
Saying that any research project begins with providing definitions is commonsensical, but such a process must overcome several obstacles and is limited in scope (Soler, 2002). According to Wittgenstein, the form of the *a priori* definition is purely analytical: indeed the traditional proposition S=P is equivalent to saying A=A, since resorting to words, which are signs, in order to define a word, also a sign itself, leads to a tautology and, thus, to a *regressio ad infinitum* (1922 3,221: 49). There are however other paths to the definition of a concept or an object, one of them consisting in an *a posteriori* description that resorts to the analysis of practices. This bottom-up procedure corresponds to what specialists of language teaching and learning do when they need to assess the impact of teaching instruments like CLIL in the classroom in terms of language acquisition. Another method consists in adopting a more normative, top-down approach by using key concepts borrowed from other fields of knowledge and research; this is what the authors aims to examine in the present contribution.
But to justify this approach needs further examination of an epistemological kind that entails a thorough introspective analysis and criticism (Piaget's “internal epistemological crticism”) carried out by the specialists of the target domain. The aim of such an analysis is to legitimize our practices because what is at stake is crucial to the development of the didactics of languages: it ranges from student's language acquisition to the building up of a scientific knowledge based on teaching instruments or tools like CLIL that are still in need of more foundational justifications. Researchers in the area of language and language for specialists use tools and methods borrowed from social sciences, notably sociology, so as to reach the highest scientific standards as in hard sciences. Yet, it seems that they have neglected to take the epistemological dimension – which differs from mere theory - into account (De Bruyne, 1974), something that social sciences have done by integrating the theoretical, epistemological and practical approaches in their research domains. As De Bruyne puts it, “in every researcher there is a philosopher; and there is a necessity for it, due to the

problems encountered in any research process, viz. the nature of the explanation, of the facts, the validation of procedures, etc" (*ibid.*, 41).

Like all cognitive and pedagogical experiments, CLIL has generated a lot of literature, and a lot of different denominations corresponding to its various local applications, and so far no less than 33 of them[1] have been identified (Eurydice, 2006: 7) and designate a bi-/multilingual approach in which the target language is used to teach and learn a subject matter on a complementary basis (Garcia & Baetens Beardsmore, 2009: 208). Context (which comprises the subject matter, the institution in which it is implemented, teacher training, exposition to the target language, duration of the exposition) is in fact of paramount importance with CLIL, since the latter has emerged in the 19th century in countries with several official languages, like Luxemburg[2] and Malta, or, later on in the 1950's, where minority languages were given some status as well as the possibility of being taught at school[3].

The variety of context and application makes a complete recension difficult to carry out, and it is also hard to see where it may lead in terms of scientific output: we know what loosely connect all these implementations, but we have no clear idea of what result would such comparisons yield. Yet, one cannot help but think that CLIL, by bridging the gap between cognitive theory and pedagogical practice, may be used as the cornerstone of the epistemology of the didactics of foreign language teaching and learning precisely because both are theoretical and practical. What needs to be done is to analyze how CLIL can be instrumental in the creation of a concept that could both describe what didactics consists of and how it operates on the field. More importantly, it is crucial to show that a purely didactic approach tends to neglect the role played by the subject matter in the analysis of CLIL's impact on teaching and learning.

The present contribution aims to provide a three-tier approach to concept-building and to epistemological analysis in the following manner: first, by assessing how CLIL can be defined as an instrument, a tool. Because they are purpose-built and context-dependent, tools have no existence of their own but connect to each other by means of analogy; what they point to is not their particular efficiency and performance, but to the design that lies behind their use: beyond CLIL, there is a conception of language teaching and learning that comprises rules in changing contexts, more than it deals with the particular connection with the subject matter to which the target language is associated ; in that perspective, references will be made to Heidegger's concept of « Tool » (*Zeug*).

Our second point will examine how this underlying conception of teaching and learning can be defined as a « language game », as Wittgenstein puts it, that remains just what it is, an experiment in language teaching and learning, specially designed for classroom scenarii, because it only imitates real life experience of language use. The utility of the « language game » lies in its capacity to encapsulate a classroom experience and differentiate it from the complexity of the « forms of life » (to quote Wittgenstein again) to which it is attached. This will lead to our third and last point, which will show how these language games can only take any special significance when seen in connection with the subject matter they aim to teach, and assume a more ancillary function. For what really matters is to focus on the territory (as Deleuze and Guattari have defined the term) formed by each discipline so as to determine how language teaching and learning adapts to their particular culture ; this will enable the researcher to establish correlations between languages for non-specialists (Language for Law and Language for Science) so as to determine its key characteristics and how to adapt teaching and learning techniques to its requirements, and, for each language, how the local, historical, institutional contexts impact the teaching and learning process in different countries and school systems.

1Among them, there are numerous acronyms in the English-speaking sphere, like « « Dual Focussed Instruction », « Teaching Content Through a Foreign Language », « Content Based Language Teaching », « Bilingual Content Teaching », etc.

2Bilingual education was implemented there as early as 1843, and trilingualism – French, Luxemburger and German- was adopted in 1913.

3This was the case in Germany, Hungary, the Netherlands, Poland, Slovenia, Slovakia, or the UK (Wales and Scotland).

I- The limits of CLIL as an epistemological instrument

The variety of CLIL-like implementations in language teaching and learning testifies to its connection with context and particular situations. A recension of all the forms of CLIL teaching will serve a limited purpose, which is to find the common points in all of them beyond the surface differences. However, finding the constant features gives the appearance of unity, when CLIL is a rather flexible, umbrella term, and is more interesting in its differences than in its common characteristics. The reason for this lies in what it aims to encapsulate, namely a particular type of exposition to a foreign language through the mediation of a given subject-matter. And the term which epitomizes best what CLIL is all about is "Integration", which is more or less present in many of its parent acronyms. This process is not specifically studied "either out of political and institutional necessity, or out of didactic and scientific ignorance" (Gajo, 2009 : 18).

"Integrated learning" refers to the purpose of CLIL, that is, the manner in which it connects language teaching to the experience of language made by the learners. In a very concrete way it also states what is being done, how it is done, and with what results, on an *ad hoc* basis. A tool, according to Heidegger, has no meaning in itself except that it creates connections with other tools so as to form a chain of meanings that constantly refer to one another and signals the "tool-like" characteristics of other objects. The ultimate function of tools is to create an ambient world, dominated by a sense of purpose and of utility; it is thus a particular way for beings (also referred to as *Dasein* in Heidegger's terminology) to relate to the world according to a specific modality called *preoccupation* (1925 §16: 107); in our case, this world of preoccupation reveals itself as such through the following connections and layers: language teaching techniques connected to subject-matter teaching (teacher's competence), language and subject matter knowledge acquisition (cognitive gains for learners)[4], real-life experience of language that necessitates verisimilitude in classroom scenarii and activities, something akin to "project-based teaching and learning"[5]. So if CLIL contributes to the creation of a world that shares features with real life, but remains attached to the social codes of school, it does not refer to anything else but itself and its avowed purpose; in that sense can it be said that CLIL, like other tools, is self-referential and cannot speak or points to anything beyond itself. Even the concept of "integration", if it is analyzed from the practical classroom implementations or the institutional programs, can only be measured in terms of "balance", "degree", or "complementarity" between language and subject-matter. One particular issue it does not address is that of teacher training, and the type of combination needed to effectively balance out the cognitive benefits of subject-matter teaching and language acquisition. Indeed teachers of CLIL are either specialists of the subject-matter and have enough skills to teach it through the medium of the target language, or they are trained as language teachers and they adapt their teaching to the terminology of the subject-matter, but do not initially have much in-depth knowledge of the topic. What this entails is that one of the two fields will remain in an ancillary position, while the other will dominate, to the extent that the status of CLIL in the teaching landscape is seen either as a language class with some cultural references to the subject matter, or a math/ history/ literature, etc. class taught in a foreign language. Is it meant to foster immersion in that language or to signal the importance of that language in many different contexts? All these answers lies beyond what CLIL can say about such issues. What nevertheless emerges from these remarks is that there is a strong correlation between CLIL and a game, the goal of which is to use a particular type of narrative in order to teach language in context. More specifically, the second point of this contribution will show how the notion of "language game" as defined by Wittgenstein, can broaden the scope of analysis and foster a better comprehension of the relation between language and subject-matter in a social and institutional context.

4All this constitutes what Heidegger calls the "wobei der Bewandtnis", ie. The aim of the activity and of tool usage.
5"Womit der Bewandtnis", ie. The means by which the activity is carried out.

II- CLIL as a language game

In his *Philosophical Investigations*, Ludwig Wittgenstein defines language games as the association of language and any given activity (§23), which includes most of what we do in our daily life, and expresses the essential features of any given society, something that Wittgenstein calls "forms of life" (§19). The language game is also made of rules that cannot be described outside the performance of the activity itself (§75). Another characteristic of "language games" is their autonomy from material states of affairs: for instance, cooking a dish is a game; it is linked to language if one follows a recipe, but it has a pragmatic purpose, that of preparing food that will be eaten. By contrast, a game of chess has no other purpose than itself, and the rules of chess do not influence life in any concrete manner. Now language is what enables humans to create a world of reference, but in so far it takes the form of the proposition, which can be attributed truth values: a proposition means something when its truth can be assessed. Now, if we apply this definition to CLIL, what strikes immediately is its relative autonomy from the professed institutional aims it purports to reach:

- It claims to improve language acquisition by grounding this process in a real life activity (learning through a different subject-matter); however, if field research clearly indicates that learners feel less inhibited and can use the target language in a greater variety of circumstances, there is no evidence that acquisition will automatically reach the higher tier of the CEFR grid (i.e. the C1/C2 levels). In fact, the Common European Framework is also a tool that facilitates language skills assessment in order to allow a better integration in the target "form of life", but at varying levels. Besides, it does not even mean that language usage will be increased outside the classroom, which, after all, should be the main goal of language acquisition. Yet, in the classroom, it functions like a game, with its rules, and it may function quite well;
- The degree of integration of language teaching requirements and subject-matter teaching procedures is difficult to evaluate, to the extent that attributing facilitated acquisition to one or the other is not easy to determine: the operation by which learners reach the point of acquisition remains unclear, and hard to harness to any particular rule or game;
- This result can only be reached through a preliminary agreement between teachers and learners, just like when a game is being proposed, and the rules, artificial as they may be, are accepted as such and implemented (O'Connell, 2013: 28);
- The multiplicity of CLIL programs (to the extent that an -S should be adjunct to the acronym) does not permit any further analysis other than stating their superficial similarities, what Wittgenstein calls "family resemblance" (§67).
- From an epistemological point of view, this last point means that CLIL, as a language game, does not refer to any form of didactic reality, that is, the mechanism by which acquisition is reached, and in what kind of manner it harnesses language to social reality. In Wittgenstein's words, rules are made up "as we go along" (§83);
- Finally, using language to assess the truth-value of a language game like CLIL and its efficacy in terms of language acquisition is clearly aporetic, since there is nothing outside and beyond language to attribute meaning (§119).

But maybe the main issue is to determine the perspective to adopt when analyzing the impact and place of CLIL in the research on language teaching and learning for non-specialists.

We saw that CLIL is characterized by the integration of language and subject-matter teaching. If one adopts the point of view of language teaching and learning, subject-matter must be seen as a variation that does not affect the kind of didactic and pedagogical process at work in CLIL: the framework is identical (projects, exercises in context, scripted sequences of teaching with particular emphasis on the syntax and lexicon).Conversely, if one tries to define CLIL by focusing on the specificity of each subject-matter associated with language teaching and learning, the analysis will take a different turn: variation will be a key criterion, which should favor comparative studies between apparently unrelated fields of knowledge, each one associated with a particular epistemology, which gives less importance to language acquisition, at least apparently. What shall

be contended in the third point of this contribution is that variation is what characterizes best what CLIL aims to implement, as well as its impact on language teaching and learning as a research path.

III- CLIL as the expression of territoriality

1. **Why variation matters**

If life can be compared to a continuous flow, it winds its way through social activities and territories governed by the rules imposed by a State apparatus, in Deleuze and Guattari's words. Territories may take different shapes, but they form units around a nexus of activities characterized by habits: the family circle, the workplace, school, the economy, politics, war, international relations, etc. Life is thus a succession of movements through which individuals change territories (Deleuze & Guattari, 1980: 386). Besides, territories differ in rhythm from one another, which can be defined by their activities; in turn, these activities generate their own tempo, themselves determined by the concepts that preside over their performance and equally emerge from them.

In teaching and learning, this can be exemplified by the specific culture (ideas, processes and epistemology) developed and nurtured in each subject-matter taught at school, something that may be akin to the legitimacy of the forms of knowledge. In other words, apprehending CLIL through the culture of the subject-matter that is taught in the target language may yield interesting results in terms of research.

2. **An approach to variation**

Remarkable attempts at typifying languages for specific purposes (also known in France as "langues de spécialite") have dealt with such idiosyncrasies by resorting to fiction. Scholars like Michel Petit (1999) believe that using popular fiction that incorporate the thriller genre to a professional and cultural environment well-known to the author[6] may promote a better comprehension of specialized language in action, in a context that owes much to real practices of the profession that serves as a backdrop and as a key player in the plot. While this may provide some elements of comparison with CLIL programs, the latter can be distinguished from its more literary counterpart in the usage that is being done of the subject-matter, in that it takes center-stage importance in the whole process.

Now, stating that, for instance, teaching sciences differs from teaching law may appear too obvious to mention, in the same way it their respective languages differ from one another. More importantly, the manner in which the domain forms a territory (its connection with the State apparatus) within a social context influences the language it speaks and also the manner in which its tenets, or core knowledge and procedures, are taught. This is the reason why teaching science through French may differ from teaching it in English, and, again, whether this takes place within a French or English institutional context. It looks more evident with law, so interwoven it is with the shaping of local political institutions. The territory of law is self-centered, idiosyncratic, particular, while the language of science seems to lack borders, to be transnational, more detached from political considerations; scientists form another type of territory, structured around exchanges, travels, and the quest for a universal language to express their concepts; if this language is not mathematics, as Leibniz would have had it, does it make any difference whether it be English or French or some other language? And to what extent the domination of one language over the teaching of science (generally speaking) impacts its future development? These are a few questions that are entailed by a double comparison: a horizontal one, between two apparently antithetic domains in which CLIL may develop in different directions, like science and law; a vertical one, in the long evolution of each domain and the manner in which its language was formed and transmitted. What remains to be studied is the type of approach that should preside over such studies that aim to influence the way in which language teaching and learning is apprehended.

6It is known in French academic circles by its acronym FASP ("Fiction À Substrat Professionnel"- lit. "fiction based on a professional context").

3. **Some epistemological issues**

Learning the language of a subject community (of knowledge, of "culture") is synonymous with learning the way a community thinks; one cannot be learned without the other (Lemke, 1989; Mortimer & Scott, 2003; Mercer & Littleton, 2007). Learning the terminology, however, is only the beginning of understanding. Acculturation into and appropriation of the discourse and practices of a subject requires time, for "there is a difference between talking about a practice from outside and talking within it" (Lave & Wenger, 2000: 29). Learners need opportunities to construct their own understanding of subject community knowledge, using appropriate frames of reference and vocabulary under expert tutelage. Further integrating those teaching content into the discourse about how language mediates content (subject-matter) learning would provide complementary insight into the language practices relevant to CLIL; the latter requires an in-depth reflection on how language as a teaching tool and specialist language interact, and how they differ in kind with the subject-matter. The following criteria may provide a key to the structuring of the epistemology of CLIL and specialist languages:

- Context: in itself, this word does not bring much to the discussion unless there is an agreement as to how it should be devised. Indeed, context is not so much a matter of direct interaction between language and activity, but a question of scale: should one analyze CLIL experiments in one university, nationwide, internationally? As sociologist Bernard Lahire puts it, it is vital to become aware of the variation in scales of observation used in field studies, of the varying levels of social reality that are aimed and of the nature of the facts that under scrutiny (2012: 226).
- Culture: CLIL has often generated a lot of interest in the language, the content and the teacher involved in this process, without insisting too much on "culture", albeit a key factor in CLIL (Bonnet, 2012), since "content is never culturally neutral" (Sudhof, 2010). But what does culture exactly mean in this particular context? Taillefer (2004) refers to the existence of a "professional culture" as well as of an "academic culture", and assessing to which degree these interact within CLIL is essential. Indeed it is generally admitted that language and culture cannot be dissociated in foreign language teaching and learning, so much so that French academics have coined the expression "culture-language" to designate this conceptual compound (Porcher, 1995: 53; Galisson, 1998: 110). Yet there are many disagreements as to the integration of culture at large to specialized languages that are usually very good candidates for a CLIL implementation. If the language of law is closely connected to the history of the institutions that have fostered its development and given it a different turn from one nation-state to another, the language of science has always privileged clarity in academic exchanges. In doing so, have the scientists sacrificed their personal social-cultural sense of belonging to adopt a so-called universal language, considering that some academics maintain that there is no substantial language input in math classes taught through English, for example? One can wonder whether this statement has any influence on the formation of the concept of "specialist language", and on the manner in which this language should be taught in a dedicated course by a language teacher (Piaget, 1970: 5). These are but a few of the epistemological issues that the use of CLIL in certain, specific domains generates; taken together or separately, they only indicate the degree of complexity required in order to articulate the diversity of their interactions.

4. **Complexity**

Edgar Morin defines complexity in reference to Pascal's aphorism that states "I hold it impossible to know the parts if I do not know the whole, and impossible to know the whole if I do not know the particular parts" (*Pensées* – 1657, 1962: 120) in order to promote what he calls "Complex Thought" . In the domain of education, maybe the idea of subject-matters that divide up entire regions of knowledge should be put aside in favor of a more holistic approach, something that CLIL hints at by means of its "integrative" nature. This offers an interesting contrast to the constant fragmentation of knowledge into specialized niches that create an apparently unbridgeable gap between domains of knowledge. One consequence of that phenomenon, which has been well analyzed by Lahire

(2012), is to hide the fundamental questions asked by research, something that Kant and Deleuze have tried to answer by establishing its connection with the issue of the legitimacy of knowledge: the relation between individuals, society, types of territories governed by areas of knowledge should be approached in all its complexity, something that CLIL can provide a starting point in the analysis.

Conversely, if it is presupposed that CLIL (and language teaching) can provide an insight into the epistemology of domain-specific knowledge, how can it contribute to the epistemology of its own domain? Jean Piaget exhorts educationalists and pedagogues to carry out their own "internal epistemological critique", but the obstacle to this process is great because the issue of perspective is of paramount importance. Evidently, sciences, medicine, law have all developed their epistemological tools, but most of them have been borrowed from other fields of knowledge, philosophy being the most frequent contributor. In the same way as the Heideggerian tool can only point to another tool and, from this constant crisscrossing of the environment that harbors them, creates a world of artificial reference for the *Dasein*, knowledge cannot ask itself questions concerning its legitimacy, its foundation; Wittgenstein does not write anything different when he logically supposes that hypothesizing a world that can be discussed from within is nonsensical. Language can describe facts, objects and processes only when they are sufficiently distant from it, which also points to a logical impossibility. Nevertheless, what cannot be said can still be shown, and asking the question of the foundation of a domain can be done, but from outside its own perimeter; thus language teaching and learning should benefit from the input of social sciences (sociology) and humanities (philosophy) to build up the connection between teaching instruments like CLIL and the constitution of an epistemological discourse on that domain, which is still dominated by experimental psychology, linguistics and educational sciences; our contention is not to dismiss their contribution, but to caution against resorting to domains that are precisely too close to it to avoid direct transpositions or the repetition of descriptions borne out of field studies without much scientific distance; in short, the didactics of foreign languages should gradually detach itself from its parent domains in order to become a fully-fledged autonomous branch of knowledge.

Conclusion

In fundamental research it is crucial to determine what is being talked about in language teaching and learning and to take complex interactions into account, e.g. the relation between language and specialist domain, and the various communicative dimensions conveyed by language (Lévy-Leblond, 1994: 239). As Gravé Rousseau showed, "language is not simply the object of learning, but it has become a key that opens access to general knowledge and specific know-how" (2009). And it is precisely within the teaching/learning community whose aim is to give better, simplified access to knowledge that the skills and competences that are necessary to train efficient researchers is fostered; this has a deep impact on their discourse and exchange views. Thus if this knowledge is formed in a language devoid of any cultural grounding, like international English for mass communication, there are serious risks for this thought to be over-simplified, even distorted beyond recognition. This would prove catastrophic in education at school and for the global community at large. Language, be it for specialists or for the educated layperson, is the only way humanity has to organize and produce thought and knowledge (Mocikat & Dieter, 2014), and educationalists and researchers in teaching and learning have a central part to play in its diffusion.

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